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10/602,612	06/25/2003	Gianfranco Natali	2514-1051	2481

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EXAMINER

TRIEU, THAI BA

ART UNIT	PAPER NUMBER
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3748

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/602,612

Applicant(s)

NATALI, GIANFRANCO

Examiner

Thai-Ba Trieu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 16-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

### DETAILED ACTION

This Office Action is in response to the Amendment filed on August 03, 2004. Applicant's cooperation in correcting the informalities in the specification is appreciated. Applicant's cooperation in amending the claims to overcome the claim objections relating to informalities as well as indefinite claim language is also appreciated.

Claims 1-15 were cancelled, and claims 16-28 were added. Applicant's arguments, see Pages 16-20, filed August 03, 2004, with respect to the rejection(s) of claim(s) 1-15 under 35 U.S.C. 103(a) rejection have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is set forth below.

#### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### *Specification*

The abstract of the disclosure is objected to because of the following minor informalities:

- Line 4, "***pilot point 4***" should be replaced by -- **pivot point 4** -- (for correcting typo error) (See Preliminary Amendment filed on June 25, 3003).

Correction is required. See MPEP § 608.01(b).

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Specifically:

- The recitations of "a capacity **element**" (See Claim 20), and "an **element** that measures the inductance..." (See claim 21) are required to be incorporated with the specification.

### ***Claim Objections***

Claims 16 and 25 is objected to because of the following informalities:

- In Claim 16, lines 6-7, -- **sliding** -- should be inserted before "**ferromagnetic nucleus**" (for consistency of claims).
- In Claim 25, line 4, -- **the** -- should be inserted before "**entries**" (for avoiding double recitation).

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim **22** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, lines 2-3, the recitation of "**capable of**" renders the claim indefinite, since it is not clear that under which condition the spring can push,

and under which condition the spring cannot push the ferromagnetic nucleus to a resting position. Applicant is required to identify these conditions.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Claims 16, 18-19, and 22-28 are rejected under 35 U.S.C. 103(a) as best understood as being unpatentable over Markyvech et al. (Patent Number 6,134,889), in view of Miotke et al. (Patent Number 5,152,145).***

Markyvech discloses an electromechanical actuator (Not Numbered) for the regulating of the turbocharger (50) of an internal combustion engine (80), comprising:

a solenoid (voice coil 110) with a sliding armature (140) balanced by a spring (146) and supplied with a rod (114) intended that interacts with the pivot point (196) of the turbocharger (50) (See Figures 2-3 and 5-6; Column 6, lines 46-67, and Column 7, lines 18-25);

a sensing system (position sensor 154) for sensing a position occupied by the armature in the solenoid (See Column 2, lines 54-67, Column 3, lines 1-55);

an electronic circuit which a first signal from the engine's electronic control unit (72) and a feedback signal corresponding to the position of the armature (140) in the solenoid (110) and that transmits to the solenoid a second signal for controlling a

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magnetic field produced by the solenoid (See Figure 2, Column 5, lines 57-67, and Column 6, lines 1-18);

wherein the sensing system comprises a position sensor (154) for controlling the position of the armature in the solenoid (See Column 2, lines 54-67, Column 3, lines 1-55);

wherein the position sensor comprising a linear type resistor (154) (See Figure 3, Column 7, lines 26-31);

wherein the electronic circuit comprising one control part (84) and one power part from which the solenoid is fed (See Figure 2);

wherein the electronic circuit comprises one control part (84) with at least two entries, said one control part (84) receives the signal from the engine's electronic control unit (72) in one of said two entries and receives, through the sensor, the feedback signal (via 98) corresponding to the position of the in the solenoid (86) in the other one of said ferromagnetic nucleus two entries (See Figure 2); wherein the electronic circuit comprises one control part (84) that sends the electric current to the solenoid and that is linked to signals applied to the entries of the one control part (See Figure 2); and

wherein the electronic circuit comprising one control part (84) having a differential amplifier unit (100) which receives the signal from the engine's electronic control unit (72) and the feedback signal coming from the sensor, through a power amplifier part, a current with which the solenoid is controlled (See Figure 2, Column 6, lines 9-27).

means for anchoring the solenoid on the turbocharger; wherein said means for actuating is a flange type means for anchoring on the turbocharger (See Figures 5 and 6).

Markyvech further discloses the armature having many forms (See Column 7, lines 53-57); however, Markyvech fails to disclose the armature being of the ferromagnetic material; and the spring surrounding the rod and being capable of pushing the ferromagnetic nucleus to a resting position.

Miotke teaches that it is conventional in the art of sensing and controlling the position of an actuator, to utilize the armature being of the ferromagnetic material (70, 70, 92, 140, 130) (See Figures 2, 4, 6, and 8, and claims 1 and 2); and the spring (64) surrounding the rod (60) and being capable of pushing the ferromagnetic nucleus (70) to a resting position (See Figures 2 and 4).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized ferromagnetic material, and the location and function of the spring, as taught by Miotke, to improve the accuracy of controlling the actuator, in the Markyvech device.

***Claim 17 is rejected under 35 U.S.C. 103(a) as best understood as being unpatentable over Markyvech et al. (Patent Number 6,134,889), in view of Miotke et al. (Patent Number 5,152,145); and further in view of Rieck et al (Patent Number 6,700,232 B2), and Detrick et al. (Patent Number 3,763,412).***

The modified Markyvech device discloses the invention as recited above; however, fails to disclose the solenoid coil being made of conducting wire sheathed and/or treated with appropriate insulating material.

Rieck teaches that it is conventional in the solenoid valve art, to utilize a coil (2) made of conducting wire sheathed (See Column 3, lines 5-6).

Additionally, Detrick teaches that it is conventional in the position device/actuator art, to utilize a coil (2) being treated with appropriate insulating material (See Figure 1, and Column 2, lines 25-32).

it would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the solenoid coil being made of conducting wire sheathed, as taught by Rieck; and the solenoid coil being treated with appropriate insulating material, as taught by Detrick, since the use thereof would have improved the accuracy of controlling the position of the modified Markyvech actuator.

***Claims 20-21 are rejected under 35 U.S.C. 103(a) as best understood as being unpatentable over Markyvech et al. (Patent Number 6,134,889), in view of Miotke et al. (Patent Number 5,152,145), and further in view of Benson (Patent Number 3,589,345).***

The modified Markyvech device discloses the invention as recited above; however, fails to disclose the position sensor comprising a capacitive element, and an inductive element.



Benson teaches that it is conventional in the art of the electromechanical control system, to utilize the position sensor comprising a capacitive element, and an inductive element (See Column 2, lines 45-49).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the position sensor comprising a capacitive element, and an inductive element, as taught by Benson, to improve the accuracy of controlling the actuator, in the modified Markyvech device.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Baginski et al. (Patent Number 6,265,957) disclose an electromagnetic actuator equipped with two return springs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (703) 308-6450. The examiner can normally be reached on Monday - Thursday (6:30-5:00).


However, the examiner's new telephone number (751) 272-4867 will become effective after the expected changeover date of November 22, 2004.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB  
September 23, 2004

  
Thai-Ba Trieu  
Patent Examiner  
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